APHANIUS CYPRIS (HECKEL, 1843) VERSUS *APHANIUS MENTO* (HECKEL, 1843) (PISCES: CYPRINODONTIDAE)

by

Friedhelm KRUPP (1)

RESUME. – La validité du nom *Aphanius cypris* (Heckel, 1843) est réaffirmée. La priorité relative de '*cypris*' devant '*mento*' est déterminée par l'action de Gaillard (1895), qui agissait en premier réviseur. Une synonymie détaillée est donnée.

ABSTRACT. – The validity of the name *Aphanius cypris* (Heckel, 1843) is reaffirmed. The relative priority of '*cypris*' over '*mento*' was determined by Gaillard (1895) who acted as first revisor in the meaning of article 24 of the international code. An extensive synonymy is given.

Mots-clés: Pisces, Cyprinodontidae, Iraq, Tigre, taxinomie.

HISTORICAL INTRODUCTION

In 1843 Heckel described *Lebias mento* based on specimens collected by Th. Kotschy from the Tigris river at Mosul. On the following page of the same work he gave a short diagnosis of what he regarded as another new species of cyprinodont fish, *Lebias cypris*, from the same locality. According to Heckel, *L. cypris* differs from *L. mento* in having a higher dorsum, a rather pointed head, the dorsal fin being closer to the head and numbers of fin rays and scales being different.

Cuvier and Valenciennes (1846) referred *Lebiss mento* to the genus *Cyprinodon*. Below the description of the species they stated, « Le même auteur indique en note, sous le nom de *Lebias cypris*, un autre cyprinodon... Ce poisson n'est pas suffisamment décrit et me paraît peu différent du *Cyprinodon mento* ». They did not, however, consider the two nominal species as synonyms.

In 1849 Heckel gave a detailed redescription of *Lebias cypris* and again distinguished this species from *L. mento* by the characters listed above.

Günther (1866) in his catalogue of fishes regarded both *Cyprinodon cypris* and *C. mento* as valid.

Gaillard (1895) was the first to synonymize the two nominal species. According to him Heckel's '*mento*' are juvenile specimens of '*cypris*'. As distinctive characters of adult males are easily recognizable, he selected the name '*cypris*' and placed '*mento*' in the synonymy of the former.

(1) Institut für Zoologie der Johannes Gutenberg Universität, Saarstr.21, D-6500 Mainz, R.F.A.

Gaillard's view was accepted by most subsequent authors, although still in 1976 Al-Nasiri & Hoda recorded both *Aphanius mento* and *A. cypris* from the Tigris river. Hankó (1924) confirmed Gaillard's synonymy, but as an extensive description of *Lebias mento* was given by Heckel on page 1089 while *L. cypris* was only characterized in a footnote on page 1090 he decided that, according to the international code, *Cyprinodon mento* was valid (« Da jedoch Heckel diesen Fisch unter dem Namen '*mento*' zuerst auf Seite 1089 ausführlich beschrieb, die vermeintliche Art *L. cypris* aber auf der nächsten Seite nur in einer Fussnote charakterisierte, gebü hrt diesem Fischchen den Nomenklatur-Regeln gemäss der Name *Cyprinodon mento* Heckel »). The species was later referred to the genus *Aphanius* Nardo, 1827.

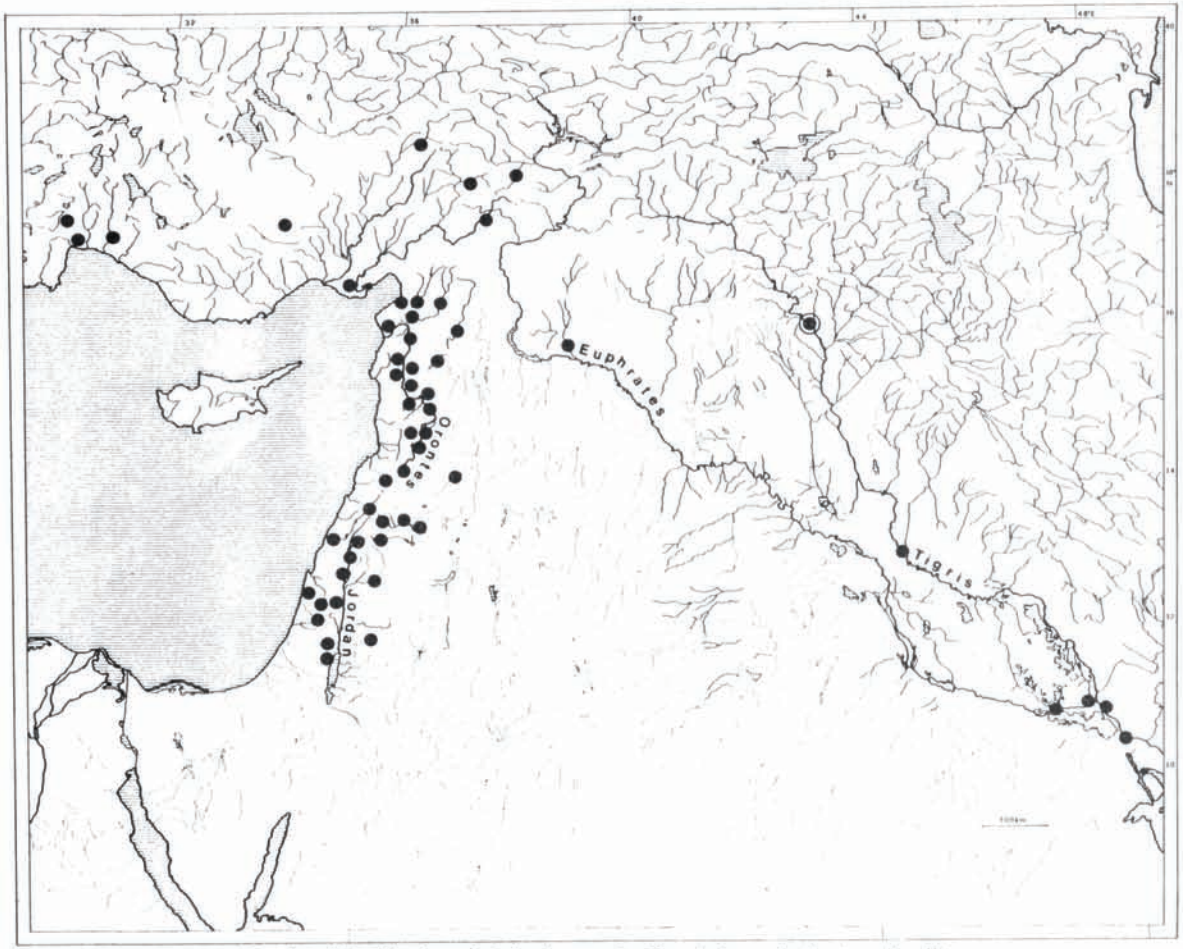
The synonymy became more complicated when some authors (Pellegrin 1923, Pellegrin 1928, Gruvel 1931, Akşiray 1952, Beckman 1962 et al.) confused *A. cypris* with *A. sophiae*. Akşiray (1952) and Steinitz (1953, 1954) even considered the two taxa as « varieties of the same species », which resulted in peculiar combinations of names (see synonymy). The discussion was finally brought to an end by Villwock, who in his first revision of Aphaniini in 1958 reaffirmed the validity of both *Aphanius cypris* and *A. sophiae*. However, the question whether the specific name '*cypris*' or '*mento*' was valid remained open. Villwock (1964) stated that he gave priority to the name '*cypris*' as juvenile respectively female specimens were described as '*mento*', despite page precedence of the latter. In 1972 Franz & Villwock decided that *A. mento* has precedence of position in Heckel's work, and should thus be adopted as the correct name of the species in question. Their view was followed by most subsequent authors.

The purpose of this note is to draw attention to the fact that– according to article 24 of the international code – in the case of several names being published simultaneously for a single taxon, their relative priority is determined by the action of the first revisor. In the case in question, Gaillard (1895) acted as first revisor in the meaning of article 24. Page precedence is a recommendation, not a rule. Consequently, the name '*cypris*' is valid.

SYSTEMATIC OUTLINE

Heckel's type specimens of *Lebias mento* and *L. cypris* could not be re-examined, as the fish collections of the Naturhistorisches Museum Wien are not accessible for the time being. Anyhow the synonymy of the two nominal species in question is beyond doubt. Heckel's descriptions and figures of both species agree perfectly with the appearance of *Aphanius cypris*. Meristic counts given by Heckel for '*mento*' are within the range of those of '*cypris*'. Although the high dorsum and the dorsal fin being closer to the head are both characters typical of large males, Gaillard's statement that *Cyprinodon mento* are juvenile *C. cypris* is doubtful as according to Heckel the maximum length of *Lebias mento* is '1 1/2 Zoll' (= 38 mm) while the largest specimens of *L. cypris* reached only '10 Linien' (= 21 mm).

Heckel realized the sexual dimorphism of the species and gave accurate descriptions of the color pattern of both sexes. Hankó's statement (1924) that females were described as '*mento*' while males were referred to '*cypris*' is obviously a



Map 1. – Distribution of *Aphanius cypris*. The circle marks the type locality.

misinterpretation of Gaillard (1895).

Günther (1864) and Tristram (1884) recorded *Cyprinodon sophiae* from Palestine. At present it cannot be decided beyond doubt, whether this is a synonym of *Aphanius cypris* or of *A. dispar*.

In the collections of the Muséum National d'Histoire naturelle, Paris, the specimens recorded by Pellegrin (1911, 1923, 1928) as *C. sophiae* from the Damascus basin are partly *A. cypris*, partly *A. chantrei* and *A. dispar*. The specimens figured by Pellegrin (1923: Pl. V, Fig. 2 and 3) are *Aphanius chantrei*. Locality data of these specimens are doubtful as *A. chantrei* is otherwise only known from the Kızılırmak drainage basin, which is about 600 air kilometers northwest of Damascus. Bodenheimer (1935: 425) took his figures of *C. sophiae* obviously from Pellegrin. His records seem not to be based on material collected from Palestine, and I disagree with authors (Steinitz 1953, Villwock 1958) who placed Bodenheimer's *C. sophiae* in the synonymy of *Aphanius cypris*.

Berg (1949) in recording *A. sophiae* from Syria and Palestine took his data from Günther (1864) and Pellegrin (1923).

Certain populations of *Aphanius cypris* were assigned to new subspecies by Akşiray (1948) and Goren (1974) (compare synonymy). They are all included in the nominal subspecies here. Detailed reasoning will be given in a later paper . The known distribution of *Aphanius cypris* is shown in map 1.

SYNONYMY OF *APHANIUS CYPRIS*

Locality data in the below synonymy are cited in the original spelling.

Lebias cypris Heckel, 1843 : Ichthyologie. *In* : J. Russegger, Reise in Griechenland etc., *1* : 1090, Mossul.

Lebias mento Heckel, 1843 : *ibid.* : 1089, Mossul.

Cyprinodon mento : Cuvier & Valenciennes 1846, Hist. nat. poissons, *18* : 128, eaux douces de la Syrie.

Lebias cypris : Heckel 1849, Naturhistorischer Anhang. *In* : J. Russegger, Reisen in Europa, Asien und Afrika, *2* (3) : 242, Mossul.

Cyprinodon mento : Günther 1864, *Proc. zool. Soc. London* : 490, Ramoth-Gilead.

Cyprinodon cypris : Günther 1864, *ibid.*, Jordan.

Cyprinodon cypris : Günther 1866, Cat. fish., *6* : 304, Jordan.

Cyprinodon mento : Günther 1866, *ibid.* : 305, Mosul.

Cyprinodon cypris : Günther 1869, *Stud. Intell. Obs.*, *3* : 411, Jordan.

Cyprinodon cypris : Lortet 1883, *Arch. Mus. Hist. nat. Lyon, 30* : 174, Jourdain, Wady Kelt, lacs de Damas.

Cyprinodon cypris : Tristram 1884, Survey of Western Palestine : 171, Jordan, Ain Feshkhah, Jabbok, Fountain of Nablous.

Cypronodon mento : Tristram 1884, *ibid.* : Amman.

Cyprinodon cypris : Gaillard 1895, *Arch. Mus. Hist. nat. Lyon, 6* : 5, Jourdain, Wady Kelt, Baret el Ateibeh, Mossoul.

Cyprinodon cypris : Pellegrin 1911, *Bull. Soc. zool. France, 36* : 109, Djéroud, Kousseïr, Hidachariyé, Ataïbé, Barada, mare d'Addous, Oronte.

Cyprinodon sophiae non sensu Heckel, partim : Pellegrin 1911, *ibid.* : 109, Ataïbé.

Cyprinodon mento : Annandale 1913, *J. As. Soc. Bengal, 9* : 32, Lake Tiberias.
Cyprinodon mento : Annandale 1915, *J. As. Soc. Bengal, 11* : 411, Jordan system.
Cyprinodon cypris : Pellegrin 1923, Voy. zool. d'Henri Gadeau de Kerville en Syrie, *4* : 34, Mare d'Addous, Barada, Damas, Hidachariyé, Kousseir, Ataïbé, Djéroud.
Cyprinodon sophiae non sensu Heckel, partim : Pellegrin 1923, *ibid.* : 36, Ataïbé.
Cyprinodon mento : Hankó 1924, *Ann. Hist.- nat. Mus. nat. hung., 21* : 156, Eregli/Ak Göl.
Cyprinodon cypris : Pellegrin 1928, Poissons des eaux douces d'Asie-Mineure : 112, Djeihan, région d'Adana.
Cyprinodon sophiae non sensu Heckel, partim : Pellegrin 1928, *ibid.* : 113, Ataïbé.
Cyprinodon cypris : Gruvel 1931, les états de Syrie : 301, bassin de l'Oronte, lac d'Antioche, environs d'Alep, Barada, environs de Baalbeck, Jourdain.
Cyprinodon sophiae non sensu Heckel : Gruvel 1931, *ibid.* : 302, Syrie, Asie mineure.
Cyprinodon cypris : Aharoni. *In* : Blanckenhorn 1935, Naturwiss. Studien am Toten Meer : 435, Ain-Feschcha.
Cyprinodon mento : Bodenheimer 1935, Animal life in Palestine : 420, Palestine.
Cyprinodon cypris : Bodenheimer 1935, *ibid.* : 424, Dead Sea, Lake Tiberias.
Cyprinodon cypris : Bodenheimer 1937, Prodromus faunae Palestinae : 261, Palestine.
Cyprinodon cypris : Neu 1937. *Ist. Üni. Fen Fak. Mecm.* B *2* : 113, Adana, Ekrem.
Cyprinodon cypris : Tortonese 1938, *Boll. Musei Zool. e Anat. comp., 46* : 40, Mar Morto, Qerietein, Schtora, Lago di Huleh, Nahr-el-Asi, Caifa.
Cyprinodon cypris : Battalgil 1941, *Ist. Üni. Fen Fak. Mecm.*, B *6* : 184, Kırkgöz.
Cyprinodon cypris : Kosswig & Battalgil 1942, *Ist. Üni. Fen Fak. Mecm.*, B *7* : 151, anatolische Südküste, Ak göl.
Aphanius cypris : Sözer 1942, *Ist. Üni. Fen Fak. Mecm*, B *7* : 313, Kırkgöz, Pınarbaşı.
Aphanius aff. *sophiae* non sensu Heckel : Sözer 1942, *ibid.* 315, Lac d'Amik.
Aphanius sophiae mentoides Akşiray, 1948 : *Ist. Üni. Fen Fak. Mecm*, B *13* : 110, Kırkgöz.
Aphanius sophiae similis Akşiray, 1948 : *ibid.* : 111, Akgöl.
Aphanius cypris orontis Akşiray, 1948 : *Ibid.* : 116, Amiksee.
Aphanius cypris boulengeri Akşiray, 1948 : *ibid.* : 118, Elbistan.
Aphanius cypris alexandri Akşiray, 1948 : *ibid.* : 119, Iskenderun.
Aphanius mento : Berg 1949, *Trudy Zool. Inst. Akad. Nauk SSSR, 8* : 851, Tigris, Basra, Mossul, Baghdad, Orontes, Jordan, Damascus, Asia Minor.
Aphanius cypris : Steinitz 1951 a, *Bonn. z. Beitr., 2* : 113, 116.
Aphanius cypris-sophiae : Steinitz 1951 a, *ibid.* : 177.
Aphanius cypris : Steinitz 1951 b, *Nature, 167* : 532, Ain Feshkha.
Aphanius cypris : Akşiray 1952, *Ist. Üni. Fen Fak. Hidrobiol.*, B *1* : 33.
Aphanius sophiae non sensu Heckel : Kosswig 1952, *Ist. Üni. Fen Fak. Hidrobiol.*, B *1* : 96, Kirkgöz.
Aphanius cypris (sophiae) : Kosswig 1953, *Ist. Üni. Fen Fak. Hidrobiol.*, B *1* : 195.
Aphanius cypris-sophiae : Steinitz 1953, *Bull. Res. Counc. Israel, 3* : 221, Palestine.
Aphanius sophiae non sensu Heckel : Östan 1954, *Ist. Üni. Fen Fak. Mecm.*, B *9* : 249, Hatay, Iskenderun, Adana, Malatya, neighbourhood of Konya.
Aphanius sophiae-cypris : Steinitz 1954, *Ist. Üniv. Fen Fak. Hidrobiol., 1* : 263, coastal plain of Palestine, Jordan system, Ain Feshkhs.
Aphanius cypris : Konuralp 1955, *Ist. Üni. Fen Fak. Mecm.*, B *20* : 177.
Aphanius sophiae orontis Özarslan, 1958 : *Ist Üni. Fen Fak. Mecm.*, B *23* : 67 ff, (nom.nud.?).
Aphanius sophiae similis : Özarslan 1958, *ibid.*
Aphanius sophiae mentoides : Özarslan 1958, *ibid.*
Aphanius cypris boulengeri : Özarslan 1958, *ibid.*
Aphanius cypris guentheri : Özarslan 1958, *ibid.* (nom. nud. ?).

Aphanius cypris : Villwock 1958, *Mitt. Hamburg. Zool. Mus. Inst., 56* : 90, Mossul, Bagdad, Basra, Umgebung des Toten Meeres, Jordan, Baalbek, bei Damaskus, Orontes, Iskenderun, Amik See, Umgebung von Antalya, Ak-Göl, Malatya.

Aphanius cypris : Karbe 1961, *Mitt. Hamburg. Zool. Mus. Inst., 59* : 78, Ak göl, Gölbaşi.

Aphanius cypris : Khalaf 1961, Fishes of Iraq : 63, Mosul, Baghdad.

Aphanius cypris : Kosswig 1961, *in* Blair, Vertebrate Speciation : 561 ff., Ak Göl, Kırkgöz, Düdendere, Gölbaşı, Adama, Iskenderun, Amik Göl.

Aphanius mento : Beckman 1962, Freshwater fishes of Syria : 151, Orontes, Barada, Awaj, Afrin, Jeirrud, Muzerib.

Aphanius sophiae non sensu Heckel : Beckman 1962, *ibid.* : 153, Orontes, Khabour, Douma.

Aphanius mento : Mahdi 1962, Fishes of Iraq : 46, Baghdad, Mosul.

Aphanius cypris : Villwock 1963, *Zool. Anz., 170* : 26, Malatya.

Aphanius cypris : Kosswig 1964, *Zool. Anz., 172* : 5, Akgöl von Eregli.

Aphanius cypris : Villwock 1964, Z. zool. Syst. Evolut.-forsch., 2 : 274 ff., Umgebung von Iskenderun, Seen bei Malatya, zentralanatolische Hochsteppe bei Eregli, Südhang des Taurus.

Aphanius cypris : Kosswig 1965, *Zool. Jb. Syst., 92* : 85, Hatay, Antalya.

Ashanius sypris (sic) : Al-Hamed 1966, *Bull. Iraq nat. Hist. Mus., 3* : 17, Inland waters of Iraq.

Aphanius sophiae similis : Kähsbauer 1966, *Ann. Naturhistor. Mus. Wien, 69* : 220, Beskonak Bölgesi im Vilajet Antalya.

Aphanius sophiae similis : Geldiay & Kähsbauer 1967, *Ann. Naturhistor. Mus. Wien, 70* : 166, Cigli civarı, Izmir.

Aphanius mento : Kosswig 1967, *Syst. Ass. Publ., 7* : 316.

Aphanius mento : Kosswig 1969, *Israel J. Zool., 18* : 250.

Aphanius mento : Mahdi & Georg 1969, *Iraq nat. Hist. Mus. Publ., 26* : 10.

Aphanius mento : Franz & Villwock 1972, *Mitt. Hamburg. Zool. Mus. Inst., 68* : 137 ff, Malatya, Kirkgöz, Düdendere, Ak Göl, Umgebung von Adana, Iskenderun, Amik Gölü, Israel.

Aphanius mento mento : Goren 1974, *Isr. J. Zool., 23* : N. Banias, Hula, Ein Teo, Lake Kinneret, Ein Fashkha.

Aphanius mento striptus Goren, 1974 : *ibid.* : 99, Rosh Hanikra, springs near Amiqam, W. Taninim, Gan Ha Shlosha, Ein Ha Naziv, Ein Moda, Ein Revaia.

Aphanius mento : Al-Nasiri & Hoda 1976, *Basrah nat. Hist. Mus. Publ., 1* : 56, Tigris near Mosul and Baghdad.

Aphanius cypris : Al-Nasiri & Hoda 1976, *ibid.* : 57, Tigris near Mosul and Baghdad.

Aphanius mento : Al-Daham, Huq & Sharma 1977, *Freshwater Biology, 7* : 245 ff, Shatt al-Basrah, Hartha, Tanumma, N. Salehia.

Aphanius mento : Ben Tuvia 1978, *Monogr. Biol., 32* : 409, 419, Lake Kinneret.

Aphanius mento : Goren & Rychwalski 1978, *Zool. J. Linn. Soc., 63* : 259 ff, Ein Fashkha.

Aphanius mento : Scholl, Corzillius & Villwock 1978, *Z. f. zool. Systematik und Evolutionsforschung, 16* : 116 ff, Ain Fashkha, Tel Aviv.

Aphanius mento : Coad 1979. *J. Bombay nat. Hist. Soc., 76* : 97.

Aphanius mento : Coad 1980, *Biol. Conserv., 19* : 73, 79, Iran.

Aphanius mento : Grimm 1980, *Int. Revue ges. Hydrobiol., 65* : 517 ff, Ain Fashkha.

Aphanius cypris : Krupp 1980, *Natur u. Mus., 110* : 157, Orontes.

Aphanius cypris : Kuru 1980, Turkiye Faunası, *1* : 52, Southern Turkey.

Aphanius sophiae non sensu Heckel : Kuru 1980, *ibid.* Southern Turkey.

Aphanius mento : Ben Tuvia 1981, *Fish. Mgmt.*, 12 : 140, Inland waters of Israel.

Aphanius mento : Villwock 1982, *Z. f. zool. Systematik u. Evolutionsforschung, 20* : 188.

Acknowledgements. – My sincere thanks go to Dr. M.L. Bauchot, Prof. J. Daget and M. Desoutter, Muséum National d'Histoire naturelle, Paris, who kindly gave me facilities to study the collections in their charge.

REFERENCES

AKŞIRAY, F., 1952. – Genetical contributions to the systematical relationship of Anatolian Cyprinodont fishes. *Ist Üni. Fen Fak. Hidrobiol.*, B 1 : 33-83.

AL-NASIRI, S.K. & S.M.S. HODA, 1976. – A guide to the freshwater fishes of Iraq. *Basrah Nat. Hist. Mus. Publ.*, 1 : XII + 124 p.

BECKMAN, W.C., 1962. – The freshwater fishes of Syria and their general biology and management. *FAO Fish. Biol. Tech. Paper*, 8 : V + 297 p.

BODENHEIMER, F.S., 1935. – Animal life in Palestine. Jerusalem. IV + 507 p.

– 1937. – Prodromus faunae Palestinae. *Mém. Inst. Egypte*, 33 : II + 286 p.

CUVIER, M. & M. A. VALENCIENNES, 1846. – Histoire naturelle des Poissons. Paris, 18 : IX + 375 p.

FRANZ, R. & W. VILLWOCK, 1972. – Beitrag zur Kenntnis der Zahnentwicklung bei oviparen Zahnkerpfen der Tribus Aphaniini (Pisces, Cyprinodontidae). *Mitt. Hamburg. Zool. Mus. Inst.*, 68 : 135-176.

GAILLARD, C., 1895. – Notes sur quelques espèces de cyprinodons de l'Asie Mineure et de la Syrie. *Arch. Mus. Hist. nat. de Lyon*, 6 : 3-15.

GOREN, M., 1974. – The freshwater fishes of Israel. *Isr. J. Zool.*, 23 : 67-118.

GRUVEL, A., 1931. – Les états de Syrie. Richesses marines et fluviales, exploitation actuelle-Avenir. Bibliothèque de la faune des colonies françaises, Paris. 453 p.

GÜNTHER, A., 1864. – Report on a collection of fishes from Palestine. *Proc. Zool. Soc. London*, (1864) : 488-493.

– 1866. – Catalogue of the Physostomi in the collection of the British Museum. London. 6 : XV + 356 p.

HANKÓ, B., 1924. – Fische aus Kleinasien. *Ann. Hist.-nat. Mus. nat. hung.*, 21 : 137-158.

HECKEL, J.J., 1843. – Ichthyologie. *In* : J. Russegger, Reise in Griechenland, Unteregypten, im nördlichen Syrien und südöstlichenKleinasien. Stuttgart. 1 (2) : 993-1099.

– 1849. – Naturhistorischer Anhang. *In* : J. Russegger, Reisen in Europa, Asien und Afrika, Stuttgart. 2 (3) : 209-357.

PELLEGRIN, J., 1911. – Poissons de Syrie recueillis par M.H. Gadeau de Kerville. *Bull. Soc. zool. France*, 36 : 107-111.

– 1923. – Voyage zoologique d'Henri Gadeau de Kerville en Syrie. Poissons. Paris. 4 : 5-47.

– 1928. – Les poissons des eaux douces d'Asie-Mineure, Paris, 134 p.

STEINITZ, H., 1953. – The freshwater fishes of Palestine. An annotated list. *Bull. Res. Counc. Israel*, 3 : 207-227.

– 1954. – The distribution and evolution of the fishes of Palestine. *Ist. Üni. Fen Fak. Hidrobiol.*, B 1 : 225-275.

TRISTRAM, H.B., 1884. – The survey of Western Palestine. The fauna and flora of Palestine. London. XXI + 177p.

VILLWOCK, W., 1958. – Weitere genetische Untersuchungen zur Frage der Verwandtschaftsbeziehungen anatolischer Zahnkarpfen. *Mitt. Hamburg. Zool. Mus. Inst.*, 56 : 81-152.

– 1964. – Genetische Untersuchungen an altweltlichen Zahnkarpfen der Tribus Aphaniini (Pisces, Cyprinodontidae) nach Gesichtspunkten der Neuen Systematik. – *Z. zool. Syst. Evolut.-forsch.*, 2 (4) : 267-382.